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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,405	12/23/2003	Akihiko Takeuchi	01306.000116	7937

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FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER

LEE, PETER

ART UNIT PAPER NUMBER

2852

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/743,405	<b>Applicant(s)</b> TAKEUCHI ET AL.	
	<b>Examiner</b> Peter Lee	<b>Art Unit</b> 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) 3, 5 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) ☒ All    b) ☐ Some \* c) ☐ None of:
    - 1. ☒ Certified copies of the priority documents have been received.
    - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)     | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, 6, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Yanagawa (US 6332066).

Yabagawa teaches a color image forming apparatus (fig. 7) (ie. An image forming apparatus) comprising: photosensitive drums (fig. 7 parts 75-1 and 75-2; note: col. 10 lines 6-10) (ie. image carrying member); and an intermediary belt (fig. 7 part 66; note: col. 10 lines 46-55) (ie. intermediate transfer body) in an endless shape movable and receivable of color toner images from said drums (col. 11 lines 26) at first and second transfer rollers at first and second transfer positions (fig. 7 parts 80 and 81; note: col. 10 lines 46-55), wherein the full color image formed on the belt is transferred to the paper (col. 11 lines 56-63) after passing said first transfer position and said second transfer position again (note: the image formation process can be found on col. 11 lines 25-65), wherein said first transfer position (transfer roller 80 in fig. 7) is a position for transferring to said belt from the nearest drum (fig. 7 part 75-1) on a downstream side in a moving direction of said belt (fig. 7 arrow a) with respect to a position that the color image is transferred from said belt to the paper material at the image transfer position (fig. 7 part 79; note col. 10 lines 63-65), wherein said second transfer position (transfer roller 81 in fig. 7) is a position for transferring to said belt from the nearest drum (fig. 7 part 75-2) on an upstream side

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in the moving direction of said belt with respect to a position that the color image is transferred from said belt to the paper material, and wherein the following formula is satisfied where a distance from said first transfer roller (fig. 7 part 80) (ie. first transfer position) to said second transfer roller (fig. 7 part 81) (ie. second transfer position) along the moving direction of said belt is a predetermined distance (col. 8 lines 58-64)(ie. denoted as  $L_{ab}$ , a belt length in the moving direction is denoted as  $L$  (ie.  $L_r$ ), and a length an image to be formed on the belt and transferred to a paper is denoted as  $l$  (ie.  $L_m$ ); Yanagawa teaches operating the color image forming procedure when the equation,  $L=l + \alpha$ , is satisfied; where  $\alpha$  represents a non-image forming length on the belt. It is essentially possible that the predetermined length taught to be between the two image forming units I and II is included in the variable  $\alpha$ . And because the length  $\alpha$  is taught to vary from being less than  $l$  to greater than  $l$  by no bound amount, the limitation of  $L_r-L_m>L_{ab}$  or  $L_r-L_m\leq L_{ab}$  is taught.

Yanagawa also teaches that the next successive image to be formed will be started at the image forming unit I (fig. 7) while the final layer of the previous toner image is being placed onto the belt (fig. 7 part 66) at the image forming unit II (col. 8 lines 15-24) (ie. at a location upstream in the moving direction of the intermediate transfer body).

Yanagawa also teaches the individual color images that form up a certain color image being transferred successively on top of each other (col. 8 lines 1-45) (ie. wherein a toner image forming position on said intermediate transfer body is immobilized in the moving direction).

Yanagawa also teaches a cleaning device (fig. 7 part 82) for cleaning the intermediary belt (ie. cleaning device disposed at a certain position around said intermediate transfer body).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa in view of Heeks et al. (US pn 6336026).

Yanagawa teaches all of the limitations pertaining to the claims from which claims 4 and 8 depend upon. Yanagawa does not teach the intermediate transfer body having a surface resistivity from  $10^7$  Ohm per square to  $10^{12}$  Ohm per square.

It is Heeks who teaches having a transfer member (fig. 2 part 4; col. 9 lines 10-15) (ie. intermediate transfer body) having a single layer with a surface resistivity preferably from  $10^8$  Ohm per square to  $10^{12}$  Ohm per square (col. 10 lines 48-55) (within the range of resistances given by the limitations).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the surface resistivity of an intermediate transfer belt be in the range of  $10^8$  Ohm per square to  $10^{12}$  Ohm per square as taught by Heeks, when building a full color image forming apparatus with an intermediate transfer belt as taught in Yanagawa. One of ordinary skill in the art would have been motivated to use the range taught by Heeks because it allows for sufficient transfer of the image on the belt (col. 2 lines 10-19).

***Response to Amendment***

Amendments to the Specification, Abstract, Drawings, and Claims have been entered.

***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Allowable Subject Matter***

4. Claim 3, 5, 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claim 11 is allowed.

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The primary reason for allowance of claim 10 is the inclusion of a toner image forming position on an intermediate transfer body being moved in an upstream direction so that the distance between a first toner image and a second toner image is larger than a length  $L_{ab}$  defined in the claim, which is found in all of claim 10, but not disclosed nor suggested by the prior art of record.

### *Response to Arguments*

6. Applicant's arguments with respect to claims 1 and 6 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments on p. 15 referring to claim 1 about the reference of Yanagawa not teaching the equivalent of a length  $L_{ab}$  being maintained between image forming stations has been considered. However it is still maintained that the variable,  $\alpha$ , taught by Yanagawa to be a non-image forming portion of the intermediate, teaches the limitation of  $L_{ab}$ . Because  $\alpha$  is taught to be an adjustable variable, it is maintained that depending on the print medium being used for the apparatus of Yanagawa,  $\alpha$  will be able to meet the limitations of  $L_{ab}$  as taught by the applicant. Also, by changing the claim limitation language defining  $L_m$  to be a maximum length of a toner image, this maximum length is still subject to be variable according to the type of print media that will be used, much like the way the  $\alpha$  variable taught by Yanagawa is adjusted according to the print media type.

As to applicant's arguments regarding claim 6 found on p. 16 first paragraph, the

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limitations in question have been already addressed in the first action, and have been addressed again in this final action.

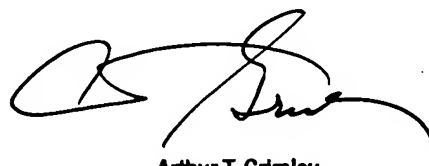
7. The rejection of claims 3 and 7 has been withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 4/26/2005



Arthur T. Grimley  
Supervisory Patent Examiner  
Technology Center 2800